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## Needs assessment regarding occupational health and safety interventions among textile workers: A qualitative case study in Karachi, Pakistan

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### Abstract

**Objective:** To determine the perceived health and safety needs identified by textile workers, managers and experts as well as direct observation of the prevailing health and safety practices in the textile industry.

**Method:** The qualitative study using the needs assessment conceptual framework was conducted in July-August 2015 in Karachi, and comprised focus group discussions with textile workers, in-depth interviews with factory managers and health and safety officers, and key informant interviews with relevant stakeholders and experts. A walk-through survey was also conducted in selected mills for which the Checklist of hazards in textiles was used.

**Results:** A total of 6 focus group discussions, 6 in-depth interviews and 5 key informant interviews were conducted. Workers were found to have limited knowledge of occupational hazards, preventions and diseases. They identified lack of awareness and non-existent safety mechanisms as areas for improvement. Managers thought preventive practices and health services were not standardised while influence of buyers in the form of international business regulations and legislations were thought to be the enabling factors for enforcing health and safety standards. Poor governance, lack of knowledge regarding labour rights, low literacy level, poor compliance and low wages were the barriers for health promotion at workplace, as identified by the experts. Walk-through survey found mechanisms in place for fire safety, but the workers and managers were generally not using Personal Protective Equipment despite the presence of several hazards at workplace.

**Conclusion:** There was found a need for context-specific occupational health and safety interventions at individual, organisational and policy levels.

**Keywords:** Occupational health and safety, Needs assessment, Qualitative case study, Textile workers, Pakistan. (JPMA 69: 87; 2019)

### Introduction

Worldwide the annual morbidity and mortality associated with work-related diseases is around 100 million<sup>1</sup> and 2.02 million respectively.<sup>2</sup> The diseases and injuries among workers occur due to a lack of training and also because of multiple hazardous exposures at the workplace.<sup>3</sup> Millions of new cases of occupational diseases emerge annually because of hazardous exposure or excessive workload.<sup>1</sup> The hazardous exposures are mainly categorised as physical, chemical, biological and psychological hazards.<sup>4</sup>

Occupational injuries and diseases have profound effects on work productivity.<sup>1</sup> In developing countries, occupational health is severely neglected<sup>5</sup> although 70% working population of the world lives in these countries.<sup>1</sup> Globally, more than 80% of occupational diseases and injuries prevail in the developing countries due to unsafe working conditions.<sup>6</sup>

Pakistan is the 4th largest cotton producer<sup>7</sup> and 4th largest

textile exporter worldwide.<sup>8</sup> According to Pakistan Economic Survey 2011, textile industry contributed around 8.5% of the total GDP. In Pakistan, textile industry provides employment to 38% of the manufacturing labour force.<sup>9</sup>

A number of health and safety interventions are proven to prevent diseases and improve health at workplace.<sup>1</sup> The interventions may include disease prevention programmes,<sup>10</sup> injury prevention interventions and disability management interventions.<sup>11</sup> World Health Organisation (WHO) lays special emphasis on the identification of needs for occupational health strategies. Needs identification should be one of the core components of any occupational health programme. It should include occupational health policy formulation, strengthening infrastructures, as well as identification of needs and development of human resources for implementation of the new strategy.<sup>12</sup>

The current study was planned to identify health and safety needs of textile industry workers in Karachi, Pakistan.

### Subjects and Methods

The qualitative study using the needs assessment conceptual framework was conducted in July-August 2015 in Karachi, and comprised focus group discussions

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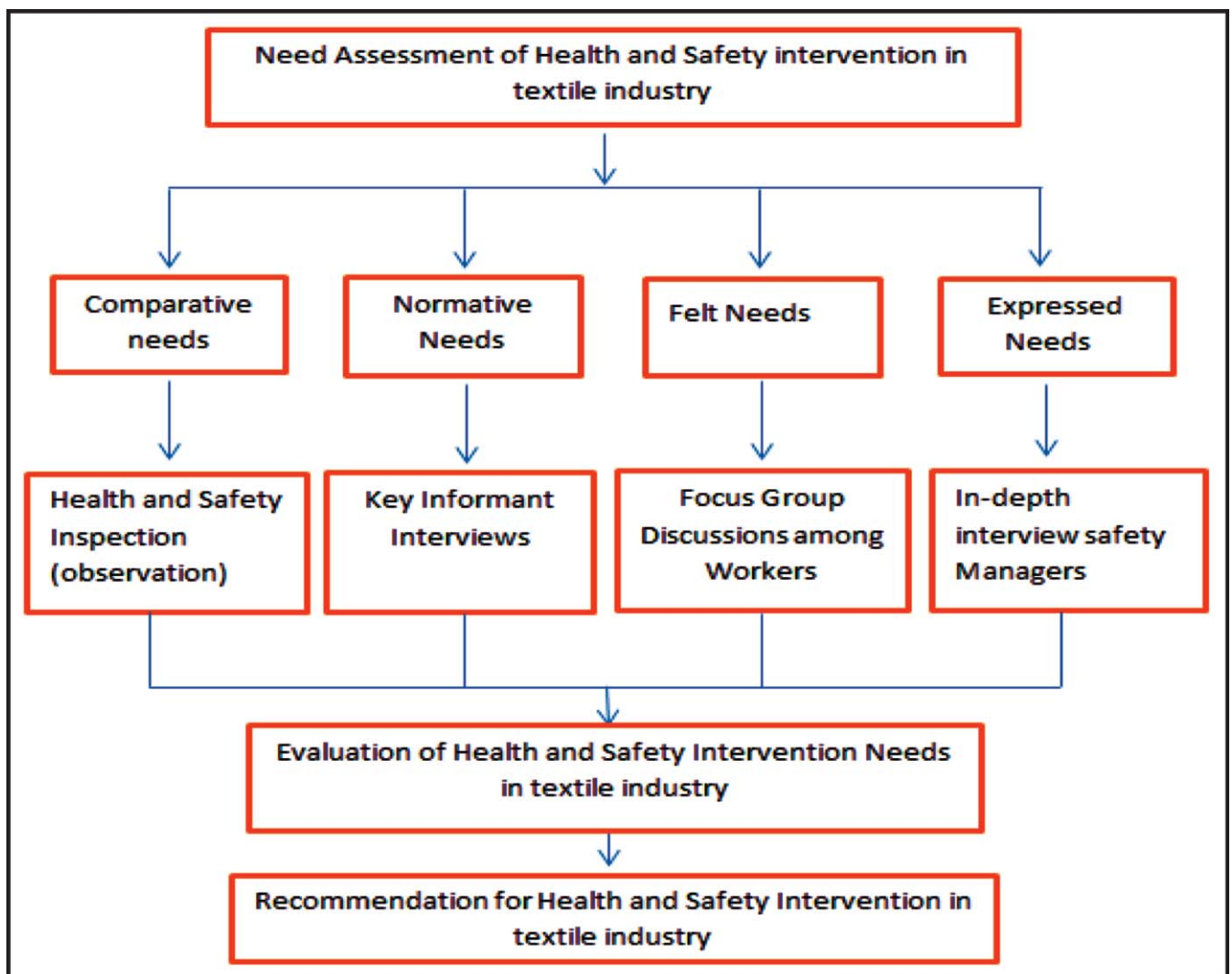
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(FGDs) with textile workers, in-depth interviews (IDIs) with factory managers and health and safety officers, and key informant interviews (KIIs) with relevant stakeholders and experts. Approval was taken from the ethical review committee of Aga Khan University, Karachi, and written, informed consent was taken from each participant.

The context in this case study was the textile industry and the case was occupational health and safety. The setting selected was cotton-processing textile industry. Units of analysis were different stakeholders of textile industry, including workers, managements and experts.<sup>13</sup> This study was a single case embedded in multiple units of analysis (also called type1 designs) with a single context.

FGDs and IDIs were conducted at a textile mill situated in the Sindh Industrial Trading Estate (SITE). This unit was

primarily manufacturing denim and comprised weaving, dying and stitching sections. There were around 400 workers in this large textile mill, including women in the stitching section. This particular textile industry was headed by a chief operating officer (COO). Each section was headed by a general manager (GM) who reported to the COO. Each GM had multiple managers working under him according to the requirement. Managers had different supervisors in their teams according to the specific tasks in the factory. Each supervisor had 2-3 in-charge staff. Each in-charge had machine operators and helpers in his team. The number of helpers and operators varied according to the need and extent of work at the factory. Moreover, there were other workers who assisted in all the departments such as loaders, housekeeping staff and technical persons.



**Figure-1:** Conceptual Framework of Needs Assessment for Health and Safety intervention in Textile industry (adapted from framework of World Health Organisation for evaluating a health promotion programme).

This study followed the conceptual framework of needs assessment developed for occupational risk reduction.<sup>14</sup> This framework was formulated from WHO regional guidelines for the development of healthy workplaces<sup>15</sup> and was adapted for this study (Figure-1).

The participants for FGDs were textile workers with more than 1 years of experience in the industry. FGDs were used to identify the needs of textile workers towards health and safety intervention from workers' perspective. There were 8-12 participants in each FGD and almost all categories of workers were engaged, with almost the same level of workplace rank at one point in time. One FGD each was conducted with supervisors and in-charges, housekeeping staff, and loaders and helpers, while two FGDs were conducted with male machine operators and one with female staff.

IDIs were conducted with the Health, Safety and Environmental officer, GM Operations, GM Weaving, managers of Quality Control, and Weaving sections, and the Compliance Officer.

KIIs were conducted with representatives of Pakistan Institute of Labour Education and Research (PILER), Sindh Environmental Protection Agency (SEPA), General Hosiery and Garment Workers Union, Textile Commissioner

Organization, Karachi, and with an environmental engineer. The KIIs were used to describe the health and safety needs of textile industry workers from experts' perspective. This information was thought to be helpful in policy implementation regarding the respiratory health promotion at work.

A checklist was formulated in line with the European Agency for Safety and Health at Work framework for walk-through surveys.<sup>22</sup> It was called the Checklist of Hazards in Textiles.

Data collection tools included semi-structured guides for FGDs, IDIs and KIIs. Interview guides were pretested in a similar mill before being used for actual data collection.

Data was configured into codes, categories and themes. Analytical coding involved arranging the coded data into a more abstract framework with categories that were generally more abstract than words in interview transcripts.<sup>13</sup> The data was rearranged into abstract sub-categories and subthemes. Data from each method was triangulated and final themes were noted.

## Results

A total of 6 FGDs, 6 IDIs and 5 KIIs were conducted. Four major themes emerged: Occupational Health and

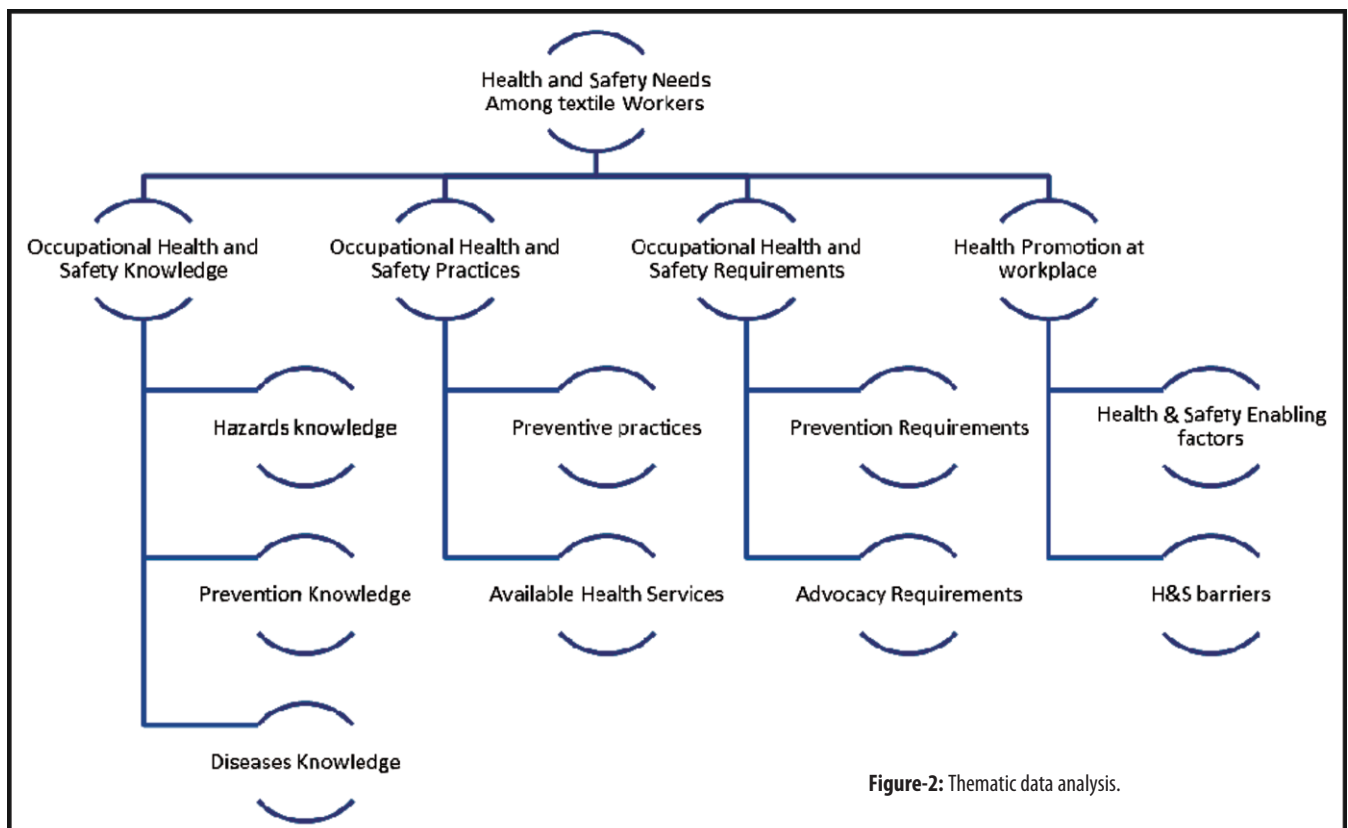


Figure-2: Thematic data analysis.

Safety Knowledge, Occupational Health and Safety Practices, Occupational Health and Safety Requirements, and Health Promotion at Workplace (Figure-2).

The Knowledge theme included subthemes Hazards knowledge, Prevention knowledge and Disease knowledge. Workers had limited knowledge about health and safety hazards, prevention, and diseases. The management also identified the limited knowledge among workers. Brown sugar (commonly known as 'gurr' in local language) was considered a remedy to cotton dust exposure by both the workers and the management. "If we take brown sugar once a day, it clears the dust." (FGD3P5). Experts mentioned use of brown sugar as a local preventive practice. "Brown sugar has been considered a replacement for personal protective equipment (PPE) and it's affordable for management." (KII2). Moreover, communicable disease like tuberculosis (TB), hepatitis B and C were also considered a disease caused by cotton dust. "The common diseases workers get in textile mills are hepatitis B, C, TB, asthma and other respiratory problems." (FGD4P4). Experts considered that there was limited knowledge among workers and the management regarding health and safety.

The Practices theme had subthemes Prevention practices and Health Services availability. Health and safety practices at the mill were not standardised. The management considered that PPE usage was a personal choice and they provide PPE to those who requested. "People operate chemicals without gloves. We provide equipment to workers whoever asks for it. If they do not use them it's their own problem." (IDI2CO). Workers mentioned poor quality of drinking water and food services. The management seconded the poor quality of food services. "We have issues of food here and we are working on the food quality at canteen which is one of our priorities." PPE were not readily available in hygienic conditions and proper size, and the usage of PPE was considered a choice. Brown sugar was being provided to workers as a local preventive practice. "We provide brown sugar to our workers as they are exposed to cotton dust in different sections as it clears the fibre stuck in the respiratory tract." (IDI6GM). Experts also mentioned that this practice was prevalent in factories. Workers and experts considered social security health services were poor and all workers were not registered, as services were accessible to registered workers only. "Workers having health card are treated free at social security hospital and non-registered workers have to

pay the fee." (FGD4S2). The management focussed on production, and workers' health and safety was mostly neglected. "We visited many factories in Karachi and Faisalabad and the workers' health status is very poor and they do not know their rights." (KII3WU).

The Requirements theme had subthemes, Prevention requirements, Health Services requirements and Advocacy requirements. All participants identified the requirement of specific PPE for specific section. Experts identified PPE as important preventive strategy but the quality was questionable. The standardised equipment should be provided by the mill, it was said. "There is a dilemma in Pakistan as multiple varieties and qualities of PPE are available in market and selecting the specific PPE is important." (KII4E). The management emphasised on workers' training regarding health awareness, while the experts mentioned the need of management training. Management and experts identified the need of awareness among textile workers regarding safety measures, PPE, hazards at mill, health effects of workplace, and rights of workers. "Awareness should be given regarding work environment hazard ... PPE usage and preventive measures and risks of not using PPE." (IDI7M1). Besides awareness, the management needs to be sensitised regarding the importance of health and safety and should be given training too as their practices have great influence over workers. "Training of supervisors/jobbers/masters also needs emphasis and their knowledge and practices have high influence on workers practice ... to implement health and safety practices at workplace." (KII2).

Moreover, management and experts emphasised on the government support in proving basic needs and regulating health and safety at workplace. Ministers, officials of health and labour departments also need to be sensitised regarding the health and safety at textile mills. "We expect you to do seminars to motivate ministers and health and safety officers of government to work on health and safety in textile industry." (IDI5GM1). Experts mentioned that health and safety of workers is generally state's responsibility. The labour department of the government of Sindh has to ensure health and safety awareness among workers. "Department of labour and human resource [Sindh] is responsible for the implementation of health and safety of workers mentioned in the Factories Act and the Mines Act, and particularly after the implementation of the 18th amendment." (KII4).



The Health Promotion theme had subthemes Enabling factors and Barriers. Enabling factors were divided into policy level and individual level. According to the experts, international exporters were obliged to maintain health and safety at workplace to access trade benefits in international markets. This had a positive impact on local factories, and large establishments adopted health, safety and environmental standards. "National companies which supply products to Western market are bound to follow occupational health and safety practices as they are audited by third party." (KII4). Moreover, laws protect workers' rights and benefits at workplace and they can file a case against any violation, especially working women. In 2010 the Protection against Harassment of Women at Workplace Act 2010 was passed and women were given awareness sessions regarding their rights and legal process." (KII3). Barriers were categorised into governance, organisational barriers and worker level barriers. The experts mentioned that laws for health and safety are not regularised by the government and factories are rarely inspected by government inspectors. "In Pakistan health and safety at industries is neglected compared to the neighbouring countries. Here, the government should provide all facilities like water supply, electricity, fire services and regulation. The government is responsible for regulation but it is not doing its job." (IDI4M). The experts considered that gender discrimination was prevalent in industries and sexual harassment of women was common. "In factories sexual harassment is prevalent towards women by managers, supervisors etc. Male workers stare at women and verbally abuse them. Older women are rarely hired to work as they prefer young girls, while pregnant women are fired." (KII3WU). Workers are not literate enough to understand the importance. "The barrier we face is compliance as workers do not follow health and safety rules designed by the company." (IDI6GMW).

Observation checklist was filled by visiting each section of the factory. It comprised health and safety hazards, and work environment status. Significant observations were noted. There were health and safety arrangements available at the workplace, which included fire extinguishers, water hydrants and first aid boxes. PPE was available but most of the workers were not using PPE such as masks or gloves while handling chemicals and they did not wear protective uniform. Machines had unprotected and unguarded moving parts and some of the electrical circuits were not covered. Workers were exposed to noise and they

had to shout to communicate in the Weaving section. However, some noise-producing machines were placed in separate rooms. The workers were also exposed to cotton dust. Workers did not use ear plugs and women were exposed to vibrations of stitching machines in the Stitching department. Absenteeism was prevalent, workers worked overtime very often. Substance abuse among workers was common and the managers used to smoke in offices themselves. Women were working only in the Stitching section. All sections were not spacious while drinking water facilities were limited.

## Discussion

Workers were found to be not interested in personal safety and there was limited emphasis on workplace health and safety from the management and the government. Workers mentioned that they did not use PPE all the time due to discomfort, although even the management emphasised the need for its usage. Management and experts also reported limited usage of preventive practices among workers. Similar findings were reported in a study where only 21% workers were found to be practising preventive measures appropriately.<sup>16</sup> However, this trend is not similar worldwide as a study in Ethiopia found that 54% textile workers were using PPE.<sup>17</sup>

The enabling factors in terms of PPE usage were management emphasis and availability of PPE, while barriers were non-availability, discomfort, poor quality of PPE and individual choice. Likewise, another study showed that 12.7% respondents were satisfied by the quality of available PPE and less than 50% (45.6%) respondents used PPE at workplace.<sup>18</sup>

However, a study in Ethiopia reported safety training, work regulation and knowledge of safety information as enabling factors to increased practice of using PPE.<sup>17</sup>

All participants reported that health services provided at the mill were insufficient because the workers mentioned that they go to unqualified private providers as all workers are not registered with the Sindh Employees Social Security (SESSI) health services. Experts also notified that employers do not register all workers to SESSI to avoid financial burden.<sup>19</sup>

Participants identified the need for specific PPE at each section. Health awareness and training of workers and management was identified as vital need by all the participants as there is limited information regarding

protective measures among workers. This finding is consistent with other studies which states 10.8% of the workers did not know of any protective measure at work while 5.1% stated that protection wasn't possible.<sup>16</sup>

Most of the management and workers identified masks as the protective equipment they use while experts mentioned that multiple good-quality PPE were needed. It included earplugs, masks, goggles, heat repellent uniform, helmet and shoes. This finding is also consistent with previous studies which state that 26% of the textile workers said they were using some protective measure at work, out of whom 81.6% were using a face mask or cloth to cover the face.<sup>16</sup>

National law prescribes that factories over 500 workers need to have access to a full-time trained medical staff such as a nurse<sup>20</sup> but there was no assigned healthcare personnel for the factory workers, thus the workers requested for presence of a physician. A local study reported the same findings that in-house factory health facilities tend to be extremely basic.<sup>19</sup> This study also identified the basic needs like water and food facility to ensure workers' health.

Participants identified policy and individual level enabling factors. Experts considered that international trade agreements have positive impact on local health and safety practices. Policy level enabling factors were Generalized Scheme of Preference Plus (GSP+). It is a term presented by the World Trade Organisation (WTO) and provides preferences to 90 developing countries on over 6300 tariff lines. Moreover, GSP+ offers additional duty-free exports to support vulnerable developing 25 countries, including Pakistan. Countries given GSP+ status have to implement labour laws and rights, gender rights and equality, protection of the environment, human rights, climate change etc.<sup>21</sup> Besides international influence, there is effective legislation and laws for health and safety of the workers. Though the implementation is weak, the laws are helpful in pursuing a legal course. Some factories follow the rules of health and safety proposed by Constitution. Management and workers identified individual level enabling factors which include psychological health, good workplace environment, exercise and personal hygiene. Organisational level barriers include limited management awareness, financial issues, gender discrimination, violations of rights, unavailability of basic services and unstable unions. Though it was

based on women's health, a local study also cites that women workers are unaware of their basic rights such as the right to be assigned easier duties during pregnancy, right to maternity leave, and on-site factory child care facilities, and nursing breaks.<sup>20</sup>

Worker level barriers were lack of knowledge, lack of compliance, low literacy level, lack of awareness among workers, sleeplessness, overtime, limited income and poor intake. Another interesting practice that emerged from the study was that workers used brown sugar and they considered it helpful in clearing the effects of cotton dust in textile industry. This practice was also reported in a previous study that 17.7% of workers also stated the use of brown sugar as a protective measure against cotton dust exposure.<sup>16</sup> The management also acknowledged the provision of brown sugar to workers as a preventive practice. Experts termed it a myth and they were worried about the practice as workers considered it a replacement of PPE usage. Moreover, the management and owners found this practice economical compared to providing PPEs to the workers.

The findings of the current study will be a useful resource for stakeholders to assist them in decision-making regarding health and safety interventions in the national textile industry.

## Conclusion

Findings reflect a strong need of occupational health and safety interventions in the textile industry which may include trainings and capacity-building for management, sensitisation regarding health and safety needs in the industry for the regulatory authorities and the management, and health education and provision of PPE for the workers. Health and safety curriculum designers may modify the training content according to the identified needs of the industry. Policy implications may be based on three levels: individual level, organisational levels and systems level.

**Disclaimer:** The study was part of a larger project, called MultiTex (Multifaceted health and safety intervention for textile industry), conducted by the Department of Community Health Sciences, Aga Khan University, Karachi. The findings were utilised to design and modify project intervention in terms of occupational health and safety training material.

**Conflict of Interest:** None.

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## Reference

1. Treacy SS. Declaration on Occupational Health For All. World Health Organization. 1994;37-56.
2. The prevention of occupational diseases. 2013, International Labour Organization: Switzerland. DOI: 978-92-2-127447-6 Retrieved Date: Aug 2015 [https://www.ilo.org/wcmsp5/groups/public/@ed\\_protect/@protrav/@safework/documents/publication/wcms\\_208226.pdf](https://www.ilo.org/wcmsp5/groups/public/@ed_protect/@protrav/@safework/documents/publication/wcms_208226.pdf)
3. Cohen A, Colligan MJ, Sinclair R, Newman J, Schuler R. Assessing occupational safety and health training. *Nat Inst Health*. 1998; 5:1-74.
4. Levy BS. Occupational and environmental health In: Levy BS, eds. Recognizing and preventing disease and injury. UK: Lippincott Williams & Wilkins, 2006.
5. Nuwayhid IA. Occupational health research in developing countries: a partner for social justice. *Am J Pub Health*. 2004; 94: 1916-21.
6. Ali MZ. Occupational health and safety in Pakistan. Pakistan Institute of Labour Education and Research. 2005;3(4):10-4.
7. Wasti, S.E., Pakistan Economic Survey. 2012: Islamabad. Retrieved From : <http://www.iris.punjab.gov.pk/StatisticalReport/Pakistan%20Economic%20Surveys/Pakistan%20Economic%20Survey%202012-13.pdf> Date: Aug 2015. Textile Industry Sector Update. 2010, JCR-VIS: Karachi. p. 7.
9. Pakistan Economic Survey, G.O.P. Finance Division, Editor. 2011, Economic Adviser's Wing: Islamabad. Retrieved From : <http://www.ndma.gov.pk/Publications/Pakistan%20Economic%20Survey%202010-11.pdf> Date: August 2015
10. Aldana SG, Greenlaw RL, Diehl HA, Salberg A, Merrill RM, Ohmine S. The effects of a worksite chronic disease prevention program. *J Occup Env Med*. 2005; 47:558-64.
11. Tompa E, Dolinschi R, de Oliveira C, Irvin E. A systematic review of occupational health and safety interventions with economic analyses. *J Occup Env Med*. 2009; 51:1004-23.
12. Goldstein G, Helmer R, Fingerhut M. The WHO global strategy on occupational health and safety. *Afr Newsletter Occup Health Safety*. 2001; 11: 56-60
13. Yin RK. Case Study Research. In: Yin RK eds. Design and Methods. London: SAGE Publications; 2009.
14. Phung DT, Connell D, Miller G, Rutherford S, Chu C. Needs assessment for reducing pesticide risk: a case study with farmers in Vietnam. *J Agromedicine*. 2013; 18:293-303.
15. WHO. Regional guidelines for the development of healthy workplaces. World Health Organization: Regional Office for the Western Pacific, 1999.
16. Khoso A, AA Nafees. Knowledge, attitude and practices regarding respiratory symptoms among textile workers of Karachi, Pakistan: a cross-sectional survey. *J Pak Med Assoc*. 2015; 65:17-23.
17. Tetemke DAK, Tefera Y, Sharma HR, Worku W. Knowledge and practices regarding safety information among textile workers in Adwa town, Ethiopia. *Sci Postprint*. 2014; 1: 11-9.
18. Malik N, Maan AA, Pasha TS, Akhtar S, Ali T. Role of hazard control measures in occupational health and safety in the textile industry of Pakistan. *Pak J Agri Sci*. 2010; 47:72-6.
19. Yeager R. HERproject: Health Enables Returns, The Business Returns from Women's Health Programs. Levi Strauss Foundation, 2011.
20. Female Factory Workers' Health Needs Assessment: Pakistan. 2010, HER project Pakistan. Retrieved From: [https://www.bsr.org/reports/HERproject\\_Health\\_Enables\\_Returns\\_The\\_Business\\_Returns\\_from\\_Womens\\_Health\\_Programs\\_081511.pdf](https://www.bsr.org/reports/HERproject_Health_Enables_Returns_The_Business_Returns_from_Womens_Health_Programs_081511.pdf) Date: Aug 2015.
21. Salami, A.S., GSP plus Scheme and Opportunities to Reestablish Trade Union Movement 2014, Pakistan Institute of Labor Education and Research Karachi. Retrieved from: <http://piller.org.pk/images/pdf/piller%20annual%20report.pdf> Date Aug 2015.
22. OSHA e-facts. Checklist of hazards in textiles. Occupational safety and health in the textiles. [Online] [Cited 2015 September 30]. Available from URL: [http://www.osha.mddsz.gov.si/resources/files/pdf/E-fact\\_30\\_-\\_Occupational\\_safety\\_and\\_health\\_in\\_the\\_textiles\\_sector.pdf](http://www.osha.mddsz.gov.si/resources/files/pdf/E-fact_30_-_Occupational_safety_and_health_in_the_textiles_sector.pdf).